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P.O. BOX 3001
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EXAMINER	
ROE, JESSEE RANDALL	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/522,287
Filing Date: January 25, 2005
Appellant(s): BLAAUW ET AL.

Gregory L. Thorne
<u>For Appellant</u>

EXAMINER'S ANSWER

This is in response to the appeal brief filed 7 October 2008 appealing from the Office action mailed 21 May 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 5,244,375	Laurence et al.	09-1993

Perkas, M.D., TsNIIChERMET. Translated from Metallovedenie i Termicheskaya Obrabotka Metallov: "High-Strength Maraging Steels", No. 6, June 1968, pp.415-425.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-4 and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perkas (High-Strength Maraging Steels) in view of Laurence et al. (US 5,244,375).

In regards to claims 1 and 13, Perkas discloses (page 423, paragraph 9 – page 424) maraging stainless steels in the form of forged pieces, rolled sections, thin and thick sheet (plate), strip, and pipe with applications in manufacturing aircraft, rockets, refrigeration, shipbuilding, and tools such as punches and dies. However, Perkas does not specify that the maraging stainless steel would be plasma-nitrided at a temperature below 500°C.

Laurence et al. ('375) discloses plasma ion nitriding iron-based materials by plasma ion nitrding at temperatures substantially below 1000°F (538°C) in order to improve the wear resistance of the iron-based materials such as stainless steel plates (col. 1, lines 7-14, col. 4, lines 1-30 and claims 1 and 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the maraging stainless steel, as disclosed by Perkas, in the plasma nitriding process, as disclosed by Laurence et al. ('375), in order to improve the wear resistance of the iron-based material (maraging stainless steel), as disclosed by Laurence et al. ('375) (col. 4, lines 1-30 and claims 1 and 5).

Still regarding claim 13, because the structure of "a cutting tool" is not be limited, the Examiner considers any stainless maraging steel as being capable of being "a cutting tool".

In regards to claim 2, Perkas discloses forged pieces, rolled sections, thin and thick sheet (plate), strip, and pipe. Because the "shaver part" is not structurally limited, the Examiner considers any stainless maraging steel as being capable of being a "shaver part".

In regards to claim 3, Laurence et al. ('375) discloses processing times that would span 20-48 hours (Table A), which would be substantially similar to the processing times of the instant invention. Therefore, precipitation hardening in addition to nitriding would be expected. MPEP 2112.01 I.

In regards to claims 4 and 10, Laurence et al. ('375) discloses that that the plasma ion nitriding would take place at temperatures substantially below 1000°F (538°C) (col. 4, lines 1-30 and claims 1 and 5), which overlaps the range of between 300°C and 500°C. Where principal difference between claimed process and that taught by reference is a temperature difference, it is incumbent upon applicants to establish criticality of that difference. Ex parte Khusid, Bezgodova, and Ruben, 174 USPQ 59

(Bd. Pat. App. & Int. 1971).

In regards to claims 8 and 11, Laurence et al. ('375) discloses that that the plasma ion nitriding would take place at temperatures substantially below 1000°F (538°C) (col. 4, lines 1-30 and claims 1 and 5), which overlaps the range of between 370°C and 380°C. Where principal difference between claimed process and that taught by reference is a temperature difference, it is incumbent upon applicants to establish criticality of that difference. Ex parte Khusid, Bezgodova, and Ruben, 174 USPQ 59 (Bd. Pat. App. & Int. 1971).

In regards to claims 9 and 12, Laurence et al. ('375) discloses that that the plasma ion nitriding would take place at temperatures substantially below 1000°F (538°C) (col. 4, lines 1-30 and claims 1 and 5), which overlaps 375°C. Where principal difference between claimed process and that taught by reference is a temperature difference, it is incumbent upon applicants to establish criticality of that difference. Ex parte Khusid, Bezgodova, and Ruben, 174 USPQ 59 (Bd. Pat. App. & Int. 1971).

(10) Response to Argument

First, the Appellant primarily argues that the 1000°F (538°C) disclosed in Fig. 4, section V of Laurence et al. ('375) is critical to the process disclosed in Laurence et al. ('375) as clearly indicated by the lengths gone to in Laurence et al. ('375) for achieving that temperature informally and refers to column 8, lines 21-56 of Laurence et al. ('375).

In response to the Appellant's argument, the Examiner notes that none of the sections in Fig. 4, including section V, recite any particular plasma ion treatment

temperature and column 8, lines 21-56 does not recite a temperature associated with section V of Fig. 4. A preferred maximum temperature for plasma ion nitriding is indicated in Table A of Laurence et al. ('375) as being in the range of 750°F to 850°F (400°C to 450°C), which is less than 500°C as instantly claimed. However, the broad disclosure (see claim 1 of Laurence et al. ('375)) indicates that the plasma ion nitriding merely be less than 1000°F (538°C).

Second, the Appellant primarily argues that the specification establishes the criticality of plasma nitriding at a temperature under 500°C and the specification states that the temperature at which the plasma nitriding and precipitation hardening is carried out ranges from 300°C to 500°C, preferably from 370°C to 380°C, and more preferably at 375°C to provide a type of steel that is both very hard and very well corrosion resistant, while maintaining sufficient tensile strength.

In response to the Appellant's arguments, the Examiner notes that although the particular ranges specified for the plasma ion nitriding temperatures in the instant invention may be critical to achieving a combination of properties, the Appellant has not provided any data (either in the instant specification or in the form of an affidavit or declaration) to establish the nexus between the claimed plasma ion nitriding temperatures and the properties obtained. To establish unexpected results over a claimed range, applicants should compare a sufficient number of tests both inside and outside the claimed range to show the criticality of the claimed range. MPEP 716.02(d)(II).

Third, the Appellant primarily argues that Perkas teaches an elevated

temperature of 800°C to 850°C and above (pg. 421) and therefore the hardness disclosed by Perkas is not applicable to the process provided by Laurence et al. ('375).

In response to the Appellant's argument, the Examiner notes that the instant claims recite "stainless maraging steel". Although Perkas discloses, in detail, maraging steel on pages 415-423, Perkas does not begin to refer to stainless maraging steel until the bottom of page 423. Therefore, the treatment the Appellant is referring to applies to only the maraging steel and not the maraging stainless steel and it is expected that the maraging stainless steel would be applicable to the process provided by Laurence et al. ('375).

Fourth, the Appellant primarily argues that the Examples presented on page 5 of the instant specification supply the benefits of instant invention and distinguish the instant invention from the prior art.

In response, the Appellant has not provided any data to distinguish the instantly claimed temperature ranges from the temperature ranges provided by Perkas in view of Laurence et al. ('375). Therefore, the Appellant has not compared the closest prior art to rebut a prima facie case of obviousness. MPEP 716.02(e).

Fifth, the Appellant primarily argues that the position that "the structure of a "cutting tool" is not limited and the "press plates" of Laurence et al. ('375) are capable of being a cutting tool is not supportable by Laurence et al. ('375) because Laurence et al. ('375) makes it clear that the goal of the process is to "provide a hardened flat work piece, such as a press plate for the economical production of wear resistant decorative laminates." and refers to column 3, line 66 to column 4, line 2 of Laurence et al. ('375).

In response to the Appellant's argument, the Examiner notes that any piece of metal may be a cutting tool provided a high enough force. Additionally, the scope of Perkas in view of Laurence et al. ('375) would include a die (Perkas, page 424, paragraph 2), which by definition would be used to cut or form material.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Jessee Roe/

Examiner, Art Unit 1793

Conferees:

Roy King

/Roy King/

Supervisory Patent Examiner, Art Unit 1793

/Gregory L Mills/

Supervisory Patent Examiner, Art Unit 1700